

SAMSUNG

## LED Module

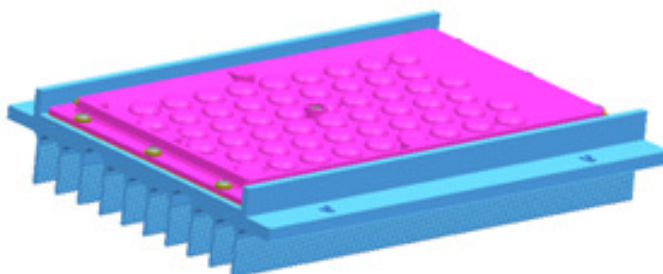
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# SPECIFICATION



## LED Module for Outdoor Engine Series

Model Name	54 LED Module
Type	<b>CRI : Min. 70</b> <b>CCT : Nominal 5000K</b> <b>Power Consumption : Typ. 83W</b> <b>Luminous Flux : Typ. 6800lm</b> <b>Light Distribution : BA 120</b>
Parts No.	STOIMW750809IC0E31

SAMSUNG ELECTRONICS CO.,LTD.



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This is a product specification of [STOIMW750809IC0E31](#), one of [STOIMWvwwxylyzzE31](#).  
 Please refer to relevant [General and Special Application Notes](#) for thermal, optical, electrical, mechanical design and reliability information.



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## 1. APPLICATION

**54 LED Module** is designed as a core component in **LED Outdoor Engine Series** for street light, road light and flood light application. This document especially specifies **54 LED Outdoor Module**.

### 1-1 LED Outdoor Engine

**LED Outdoor Engine Series** is composed of **LED Module**, **LED Driver** and **Extension Cable**.

#### 1-1-1 LED Module

There are two different types of heat sink designs for LED Outdoor Module, intended for thermal management either by engine or by fixture.

This document especially specifies **54 LED Module**.



(a) 36 LED Module



(b) 54 LED Module

#### 1-1-2 LED Driver

LED Driver feed current to LED Module.



(a) 60/90W LED Driver



(b) 120/180W LED Driver

#### 1-1-3 Extension Cable

Extension Cable is available to feed current to LED modules from separated LED Driver.



(a) 7M Extension Cable



(b) 15M Extension Cable



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## 1-2 LED Outdoor Engine Series

Typical operating current for 54 LED module is set at 1350mA. Typical luminous flux is **6800lm**.

### 1-2-1 Lumen with LED Driver(Engine : Typ. 82lm/W)

	Power Consumption (W)	Driver Output Channels (ea)	Operating Current (mA)	Lumen Output (lm)	Related Products STOIMWvwvwxylzzE31
<b>36 LED Module</b>	55	1	900	4500	STOOPY19060Z058Szz STOOPY190A2Z058Szz STOICR12266221Pxx0
<b>54 LED Module</b>	83	1	1350	6800	STOOPY21390Z058Szz STOOPY213A8Z058Szz STOICR12266221Pxx0

### 1-2-2 Using LED Module and Driver.

LED Driver feed current to LED Module. If LED Driver is far from LED Module, Extension Cable is possible to connect them.



(a) without Extension Cable

(b) with Extension Cable

### 1-2-3 Optic Solutions

Application	Light Distribution	Solutions	Material
Street Light	IESNA Type I	Short(1), Medium(1)	PC
	IESNA Type II	Short(2), Medium(2)	PC
	IESNA Type III	Short(2), Medium(2)	PC
	IESNA Type IV	Short(2), Medium(1)	PC
	IESNA Type V	Short(1), Medium(1)	PC
Flood Light	Narrow	Circular(BA15/25/40)	PC
	Medium	Circular(BA50/65), Rectangular(BA50x80), Batwing(BA85)	PC
	Wide	Circular(BA100), Batwing(BA120) Rectangular(BA90x130)	PC

\* BA : Beam Angle, PC : Polycarbonate



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## 2. FUNDAMENTAL SPECIFICATIONS OF MODULE

No.	ARTICLE	SPECIFICATIONS					
2-1	<b>Photometric Specification of LED Module @1350mA</b>						
	<b>CCT</b>	<b>Article</b>					
		<b>Symbol</b>					
		<b>MIN</b>					
	<b>TYP</b>	<b>MAX</b>	<b>Unit</b>	<b>Equipments</b>			
5000K	Luminous Flux	LF	6225	6800	-	lm	Goniometer
	Color Temperature	CCT	4850	5300	5750	K	Integrating Sphere
	Color Rendering Index	CRI	70	-	-	Ra	Integrating Sphere
※ Typical values are not necessarily the same as the nominal values.							
<b>Light Distribution Profile</b> : Beam Angle 120 degree with Optimized Illuminance Uniformity							
※ The isolux diagram is drawn at the luminaire height of 5m.							
2-2	Dimension	· LED Module : 245(L)×186(W)×45.6(H) [mm] ±1.0[mm]					
2-3	Weight	· LED Lighting Module : {1.66kg ± 0.2kg} * 4ea · Total Weight (including packing box) : 7.5kg ± 0.5kg/1box					
2-4	Operating Temperature	· Case Temperature : +3℃ ~ +80℃ (Tc ~58℃ at Ta ~25℃) · Tc measurement point 					
2-5	Storage Temperature	· Ta : -40℃ ~ +85℃					
2-6	Dust-proof Water-proof	· IP66 · Damp Location					



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No.	ARTICLE	SPECIFICATIONS					
2-7	<b>Electrical Specification of LED Module</b>						
	<b>Article</b>	<b>Symbol</b>	<b>MIN</b>	<b>TYP</b>	<b>MAX</b>	<b>Unit</b>	<b>Remarks</b>
	Power Consumption	P	74.7	83	91.3	W	After 2hr aging
	Operating Current	Iop	1283	1350	1417	mA	per 1 Module [450mA /PKG 1EA,Typ.]
	Operating Voltage	Vdc	52	-	64	V	per 1 Module [3.2V/PKG 1EA, Typ..] 18 LEDs in Series
Electrical Circuit	Maximum of 2 modules can be in parallel connection with one LED driver.						
※ The power consumption for a specific module is dependent on the operating voltage. The maximum operating current means the highest limit in any operating condition.							

### 3. PARTS SPECIFICATIONS

No.	ARTICLE	SPECIFICATIONS
3-1	<b>Lens Cover Screw</b>	<ul style="list-style-type: none"> <li>Material : Stainless Steel with Teflon Washer</li> <li>Location : between the array lens and heat sink</li> </ul>
3-2	<b>Array Lens Cover</b>	<ul style="list-style-type: none"> <li>Material : Polycarbonate</li> <li>Lens Type : <a href="#">Beam Angle 120 degree</a></li> </ul>
3-3	<b>Seal Rubber</b>	<ul style="list-style-type: none"> <li>Material : Molded Silicone</li> </ul>
3-4	<b>LED Board</b>	<ul style="list-style-type: none"> <li>LED : Ceramic PKG, CRI min. 70</li> <li>Material : MCPCB, Aluminum</li> <li>Thickness : 1.6 mm</li> <li>Stainless Steel Screws : 8ea</li> </ul>
3-5	<b>Harness</b>	<ul style="list-style-type: none"> <li>Material : PVC</li> <li>Wires : UL2464, 22 AWG</li> <li>Length(wires) : 300 mm</li> <li>Connector Plug : IP66</li> </ul>
3-6	<b>Heat Sink</b>	<ul style="list-style-type: none"> <li>Material : Extruded Aluminium</li> <li>Thermal Pad between the PCB and Heat Sink</li> </ul>



# LED Module

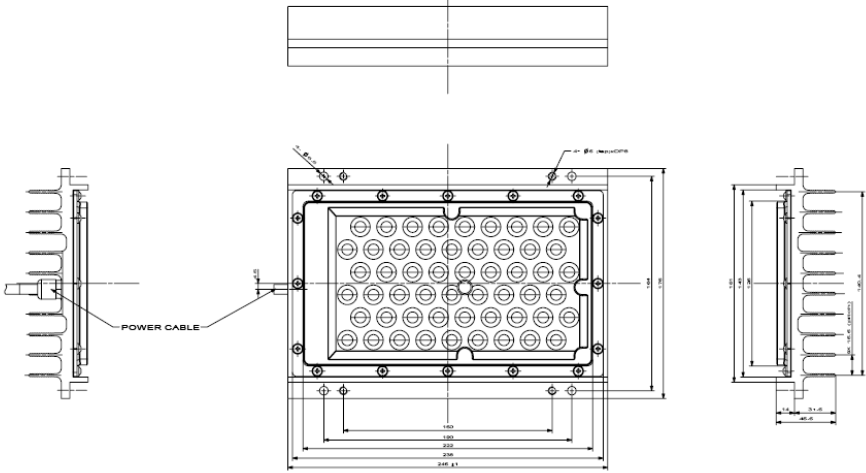
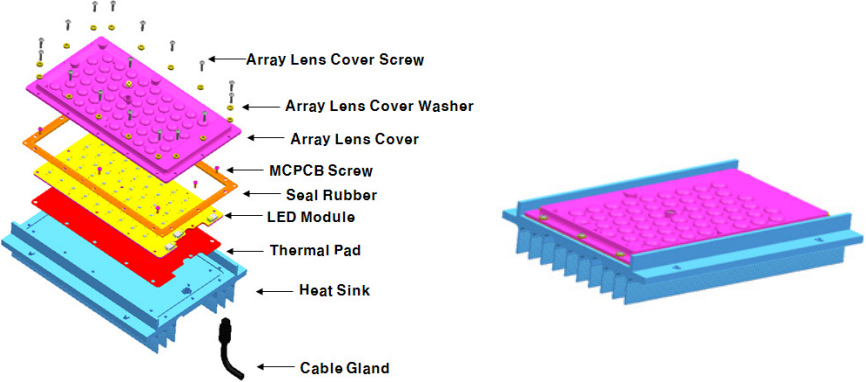

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## 4. APPEARANCE AND STRUCTURE

No.	ARTICLE	SPECIFICATIONS
4-1	<p>Appearance and Dimension (BA 120)</p>	 <p>※ Appearance is different for various optical solutions depending on the combination of the 54 core lenses. Critical dimensions are all the same for the optical solutions except for the thickness difference at the core lens cross-section.</p>
4-2	<p>Structure (BA 120)</p>	 <ul style="list-style-type: none"> <li>← Array Lens Cover Screw</li> <li>← Array Lens Cover Washer</li> <li>← Array Lens Cover</li> <li>← MCPCB Screw</li> <li>← Seal Rubber</li> <li>← LED Module</li> <li>← Thermal Pad</li> <li>← Heat Sink</li> <li>← Cable Gland</li> </ul>
4-3	<p>Labelling (General)</p>	 <p>[Module Label]</p> <p>[Box Label]</p>



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## 5. PACKING SPECIFICATION

### 5-1 Packing Method

5-1-1 Inner Box : 4 modules in one inner box

4 PCs/Inner Box

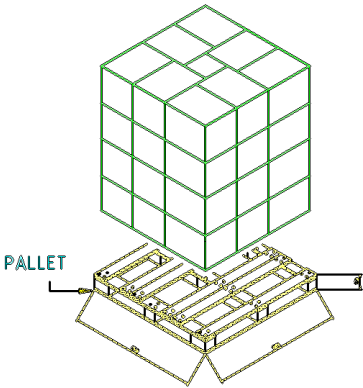


5-1-2 Outer Box : 4 modules on 1 stacks of inner boxes in one outer box

1 Stacks of Inner Boxes  
(330 x 323 x 208)



5-2 Pallet : 32 boxes(128 modules) on one pallet



32 OUT BOXES / PALLET  
128 EA / PALLET





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## [APPENDIX 1] White LED Module Product Codes

# STOIMWvwxxylzzE31

CRI(Ra)	Code
60.0~69.9	<b>6</b>
70.0~79.9	<b>7</b>
80.0~89.9	<b>8</b>
90.0~99.9	<b>9</b>
100	<b>A</b>
60.0~64.9	<b>B</b>
65.0~69.9	<b>C</b>
65.0~74.9	<b>D</b>
70.0~74.9	<b>E</b>
75.0~79.9	<b>F</b>
75.0~84.9	<b>G</b>
80.0~84.9	<b>H</b>
85.0~89.9	<b>I</b>
85.0~94.9	<b>J</b>
90.0~94.9	<b>K</b>
95.0~99.9	<b>L</b>

Nominal CCT(K)	Code
6500	<b>65</b>
5700	<b>57</b>
5000	<b>50</b>
4500	<b>45</b>
4000	<b>40</b>
3500	<b>35</b>
3000	<b>30</b>
2700	<b>27</b>

Power Consumption (W)	Code
55	<b>55</b>
80	<b>80</b>

Luminous Flux(lm)	Code
6400~10000	<b>9</b>
4300~6500	<b>8</b>
3200~4400	<b>7</b>
2600~3300	<b>6</b>
2300~2700	<b>5</b>
2150~2400	<b>4</b>
1950~2200	<b>3</b>
1750~2000	<b>2</b>
1600~1800	<b>1</b>
1450~1650	<b>0</b>

Code	Light Distribution	
	Lambertian	without lens
<b>0L</b>	Lambertian	without lens
<b>1S</b>	IESNA Type 1	short
<b>1M</b>	IESNA Type 1	medium
<b>2S</b>	IESNA Type 2	short(I)
<b>2M</b>	IESNA Type 2	medium(I)
<b>7S</b>	IESNA Type 2	short(L)
<b>7M</b>	IESNA Type 2	medium(L)
<b>3S</b>	IESNA Type 3	short(I)
<b>3M</b>	IESNA Type 3	medium(I)
<b>8S</b>	IESNA Type 3	short(I)
<b>8M</b>	IESNA Type 3	medium(L)
<b>4S</b>	IESNA Type 4	short(I)
<b>4M</b>	IESNA Type 4	medium(I)
<b>9S</b>	IESNA Type 4	short(L)
<b>5S</b>	IESNA Type 5	short
<b>5M</b>	IESNA Type 5	medium
<b>15</b>	15 deg	circular
<b>25</b>	25 deg	circular
<b>40</b>	40 deg	circular
<b>50</b>	50 deg	circular
<b>65</b>	65 deg	circular
<b>85</b>	85 deg	circular batwing
<b>A0</b>	100 deg	circular
<b>C0</b>	120 deg	circular batwing
<b>58</b>	50 x 80 deg	rectangular
<b>9D</b>	90 x 130 deg	rectangular

(I) : optimized for Illuminance uniformity  
(L) : optimized for Luminance uniformity